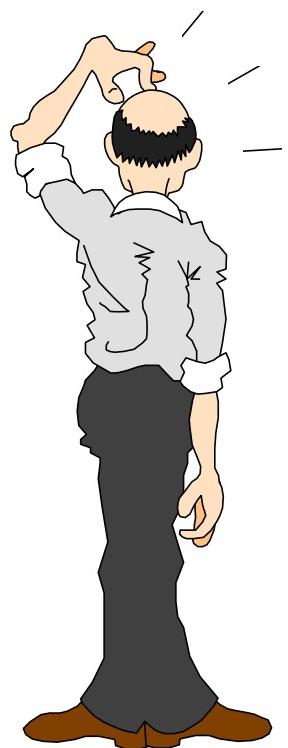


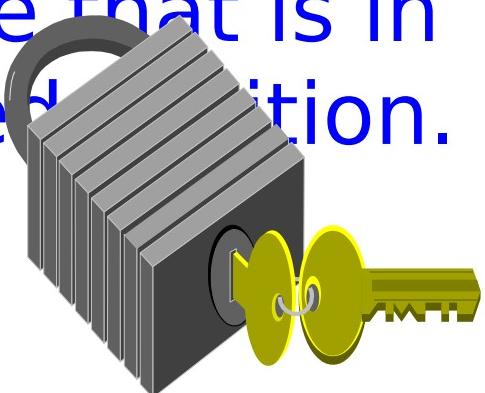
# Lockout/Tagout Standard

Proper Lockout  
Procedure



# Lockout

- Lockout is a technique used to prevent the release of hazardous energy, or to prevent the hazardous energy from escaping.
- A padlock is placed on the appropriate energy isolating device that is in the off or closed position.



# The “Fatal Five” Main Causes of Lockout/Tagout Injuries

- Failure to stop equipment
- Failure to disconnect from power source
- Failure to dissipate (bleed, neutralize) residual energy
- Accidental restarting of equipment
- Failure to clear work area before restarting



# Definitions

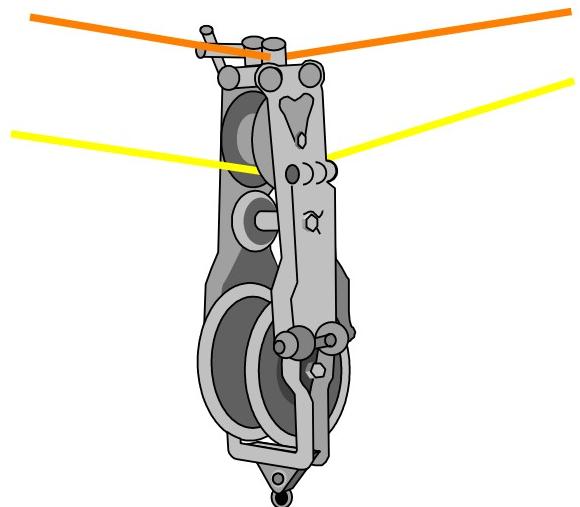
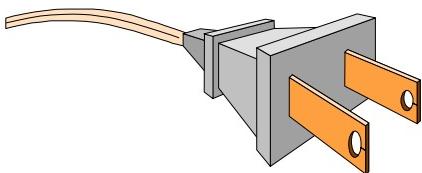
- Authorized Employee - one who locks out machines or equipment in order to perform the servicing or maintenance on that machine or equipment.
- Affected Employee - one whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

# Definitions, cont.

- Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy.
- Energy Control Procedure - Safety program adopted by the employer that includes energy control procedures plus provisions for inspecting the procedures and training employees for lockout/tagout.

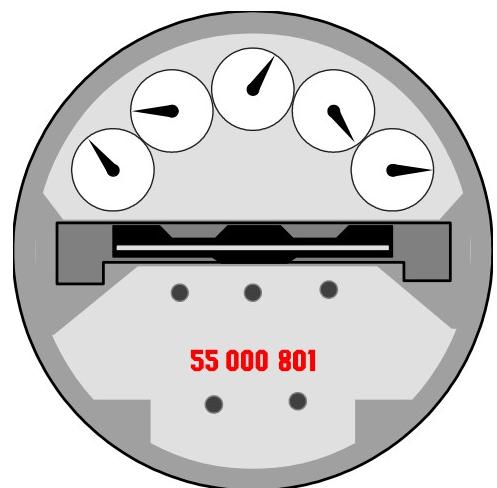
# Hazardous Energy Sources Found in the Workplace

- ❖ Electrical
  - ❖ Generated
  - ❖ Static
- ❖ Mechanical
  - ❖ Transitional
  - ❖ Rotational
- ❖ Thermal
  - ❖ Machines or Equipment
  - ❖ Chemical Reactions
- ❖ Potential
  - ❖ Pressure
    - ◆ Hydraulic
    - ◆ Pneumatic
    - ◆ Vacuum
  - ❖ Springs
  - ❖ Gravity



# Types of Lockout Devices

- ⇒ Plug Locks
- ⇒ Ball Valve Lockout
- ⇒ Gate Valve Lockout
- ⇒ Group Lockout Hasp
- ⇒ Electrical
- ⇒ Hydraulic, pneumatic, and other pressurized systems



# Lockout Procedure

- Alert the operator (s) that power is being disconnected.
  - ① Preparation for Shutdown
  - ② Equipment Shutdown
  - ③ Equipment Isolation
  - ④ Application of Lockout Devices
  - ⑤ Control of Stored Energy
- Equipment Isolation- Verification

# Removal of Lockout

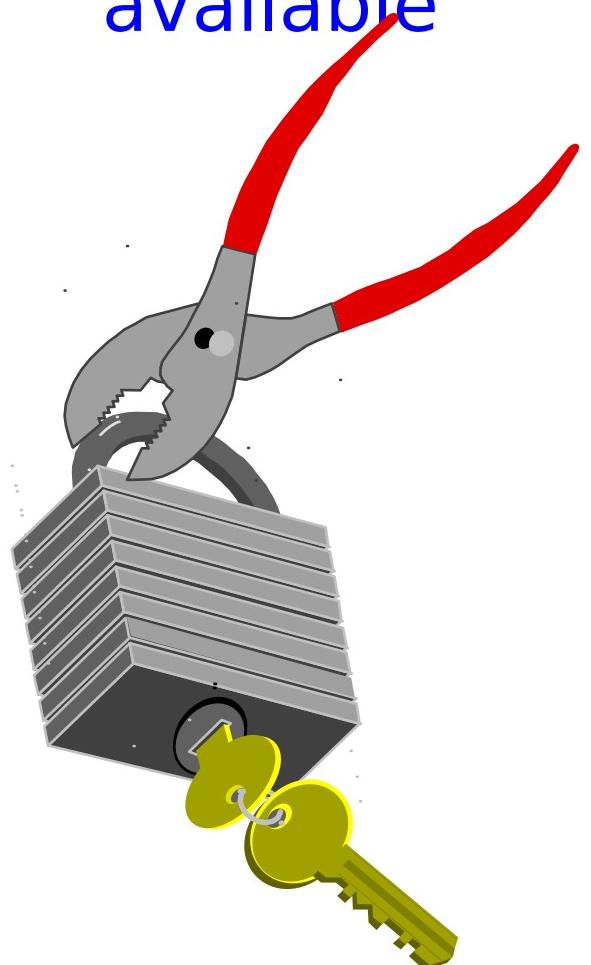
- \* Ensure equipment is safe to operate
- \* Safeguard all employees
- \* Remove lockout/tagout devices. Except in emergencies, each device must be **removed by the person who put it on.**
- \* Last person to take off lock
- \* Follow checklist

# Temporarily Reactivating Equipment

- ➁ Remove unnecessary tools from the work area and make sure everyone is clear of the equipment
- ➂ Remove lockout/tagout devices and re-energize the system
- ➃ As soon as the energy is no longer needed, isolate the equipment and re-apply lockout/tagout, using the six step procedure.

# Special Situations

- Servicing lasts longer than one shift.
- Contractors are performing service or maintenance at your workplace
- Worker who applied lock is not available



# Tidbits of Info.

- Never attempt lockout/tagout procedures unless you have been trained and certified by your employer under an approved Energy Control Program.
- Never loan or share your lock, combination, or key with anybody else.
- Always be sure all lockout/tagout devices are compatible with the environment in which they will be used i.e. corrosive, humid, etc.

# Any Questions?

